5-13-2014

UX Report: DataONE Web Site Usability Test

UAWG

DataONE Web Site Usability Test
Spring 2014 All Hands Meeting
Poster Session
May 13, 2014

Purpose:
Usability testing evaluates user experiences with technology such as the DataONE web site. The goal is to identify positive, negative, or neutral experiences and outcomes resulting from introducing a user to technology and tasks related to using that technology. This can inform further development of the technology. Monitoring of biometric data provides insights into the physiological response of users while interacting with technology. Finally, this work demonstrates capabilities of the User Experience Lab, particularly mobile assessment capacity.

Methods:
Testing is accomplished by presenting the user with two scenarios: Task 1 and Task 2. Users are fitted with biometric sensors to measure pulse and respiration. Biometric data was recorded in AdInstrument's LabChart. Users interact with the DataONE website to accomplish tasks. Morae software manages presentation of tasks and records audio, video, time on task, and mouse clicks and movements. Morae prompts users to read task instructions and initiate the task. A proctor encourages users to verbalize their thought process while attempting the task. The user concludes the task by completing the objective, giving up on the task, or being prompted by the proctor to move on due to time allocated per task.

Sample:
Sample consisted of 9 volunteers recruited during the DataONE All Hands Meeting at Park City Utah, May 13, 2014. Testing environment was not a controlled environment. 8 users concluded both Task 1 and Task 2. One participant's data could not be used due to computer error. All volunteers were members of DataONE working groups.

Analysis:
Analysis was completed in Morae Manager. Time on task and whether the participant was able to successfully complete the task were collected and recorded. Changes in the frequency and amplitude of pulse and respiration were recorded in LabChart. The proctor made notes in LabChart to signal the cause of pulse and respiration change (e.g., "participant moved

hand" or "participant expressed frustration"). Analysis was performed by comparing the pulse and respiration data to verbal comments and physical gestures recorded in Morae. Further analysis of biometric data is needed.

Figure 1.

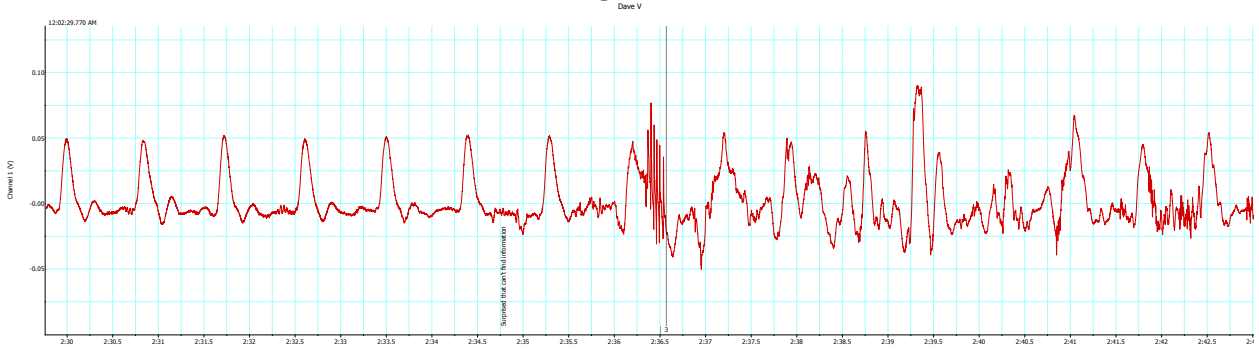


Figure 1 is a sample of the pulse rate data collected in LabChart. This figure illustrates a change in pulse when a participant expressed surprise that there was no contact information for becoming a member node. The pulse rate on the left side of the figure is steady, but when the participant struggles to complete the task, the pulse rate becomes erratic with more changes in frequency and amplitude.

Tasks Presented:

Task 1 (Q1).:You want to become a member node. Using dataone.org, find who to contact to become a member node?

Task 2 (Q2): Find DataONE publication(s) by Bertram Ludascher from workshops on large scale science.

Summary Statistics:

Tasks were measured by the time spend on the task and whether the task was successfully completed. We also observed their heart rate and respiratory rate. We measured their changes by a positive change (+), negative change (-), and no change (=). A positive change indicates that the participant's overall heart rate or respiratory rate increased in frequency. A negative change indicates that the participant's heart or respiratory rate lowered, become more steady as the task progressed, and no change indicated that overall their heart or respiratory rate remained steady and at the same frequency throughout the task. In future biometric usability studies more advanced and accurate calculations will be used to determine the change in heart or respiratory rate as a response to usability tasks.

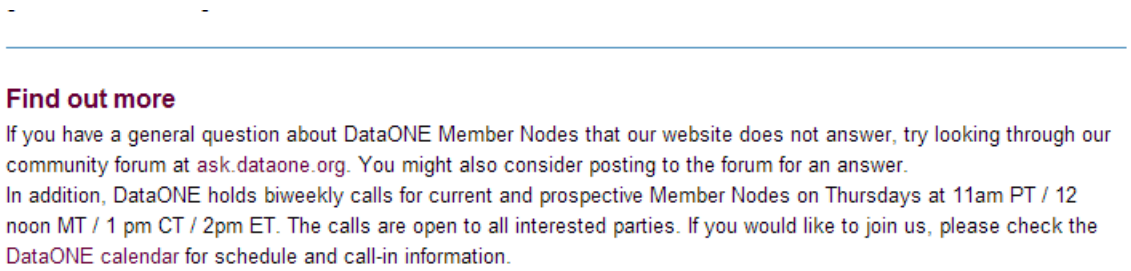
Below is a summary metrics table of the 8 respondents. The average time on the first task was 2.2 minutes and only two of eight participants were able to complete the task. The average time on the second task was 1.9 minutes and six of the eight participants were able to complete the task.

Summary Metrics

Participant	Completed Tasks Successful		Time Spent (in minutes)		Heart Monitor Observations		Respiratory Observations	
	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2
1	No	Yes	1.25	1.03	=	v	+	=
2	No	Yes	1.9	1.16	+	=	=	=
3	No	No	2.8	2.77	=	+	=	=
4	No	Yes	1.66	1.78	=	+	=	=
5	No	No	1.66	0.56	+	+	=	=
6	Yes	Yes	1.1	1.1	=	=	=	=
7	Yes	Yes	4.97	2.3	=	=	=	=
8	No	Yes	2.22	4.46	+	+	=	=
Sum or Mean	2/8	6/8	2.2	1.9				

Major Findings:

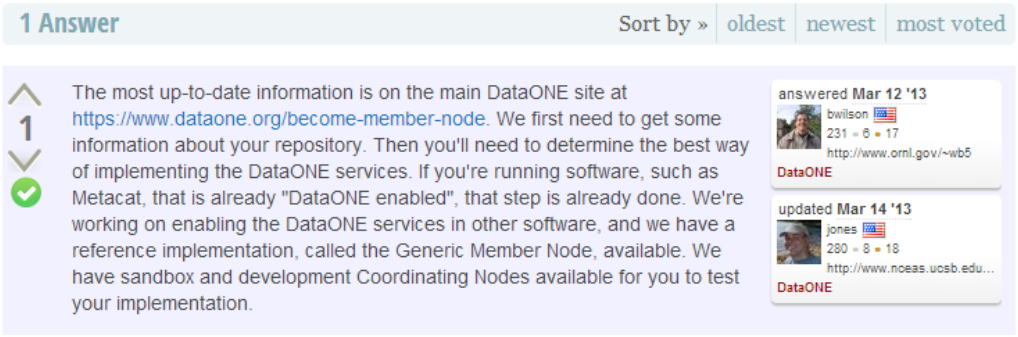
Below are the major findings in the usability tests and the U&A team's recommendation to address the findings/issues.



Issue:
Ask.DataONE.org is the only contact information for further information on becoming a member node. However, the forum only sends the user back to the original webpage.

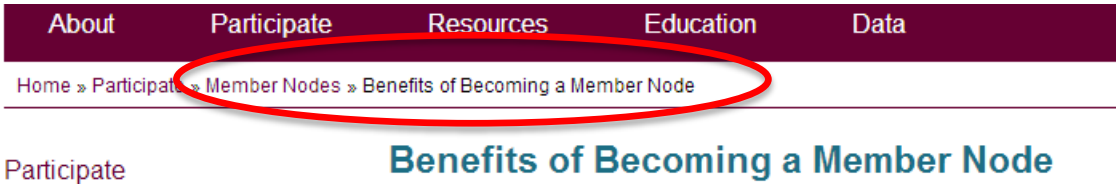
Recommendation:
In Ask.DataONE.org provide specific information about who to call and e-mail about becoming a member node.

Under "Find out More" in the DataONE member node's web page include a contact name and e-mail, in addition to the Ask.DataONE.org.



Issue:
In Ask.DataONE.org ("Where can I find more information about becoming a Member Node") there is a link to an old DataONE webpage (https://www.dataone.org/become-member-node).

Recommendation:
Review the information in Ask.DataONE.org to remove old (but still live) links.



Issue:
There are breadcrumbs in the top navigation that are not actual pages. If a user clicks on the breadcrumb "Member Nodes" they stay on the Benefits of Member Node page, which is listed as a separate breadcrumb.

Recommendation:
Update the breadcrumbs to follow the new page navigation.

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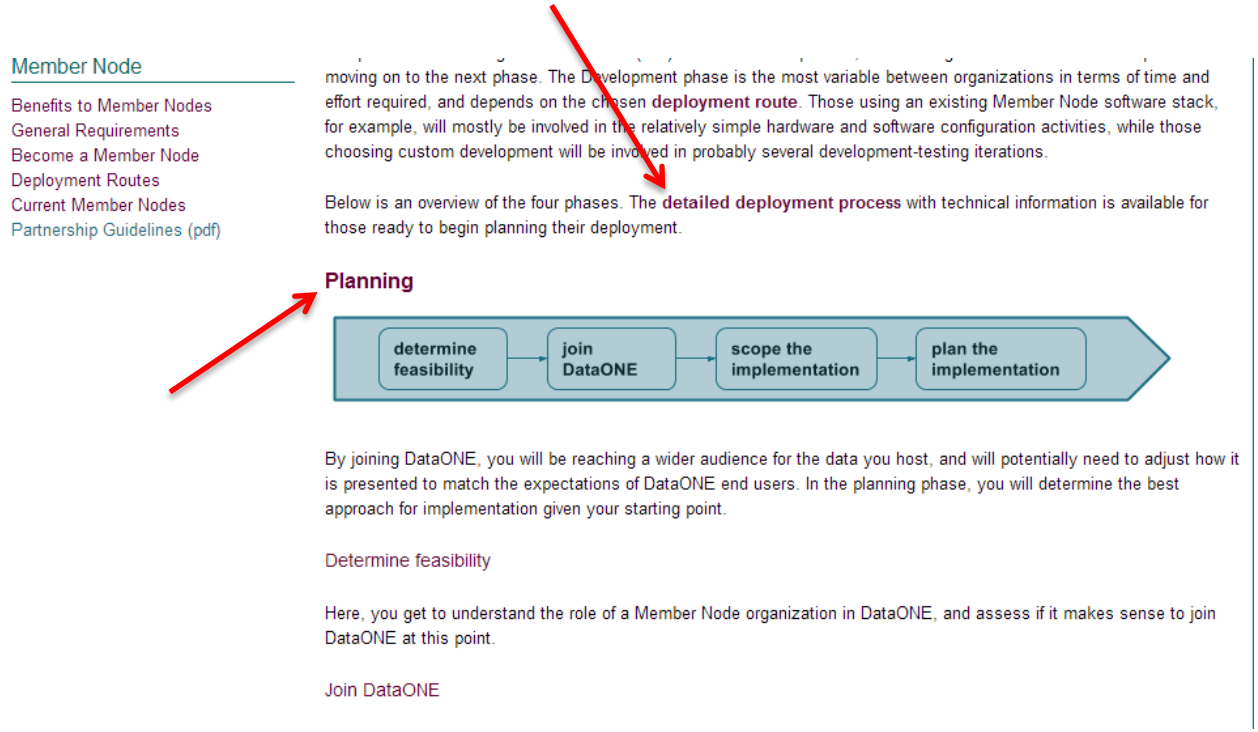
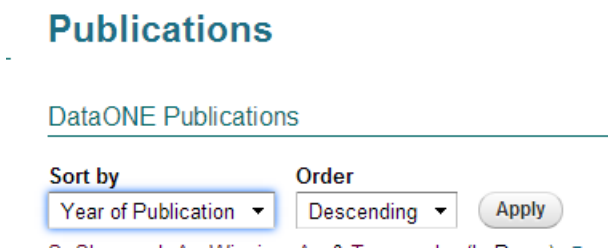


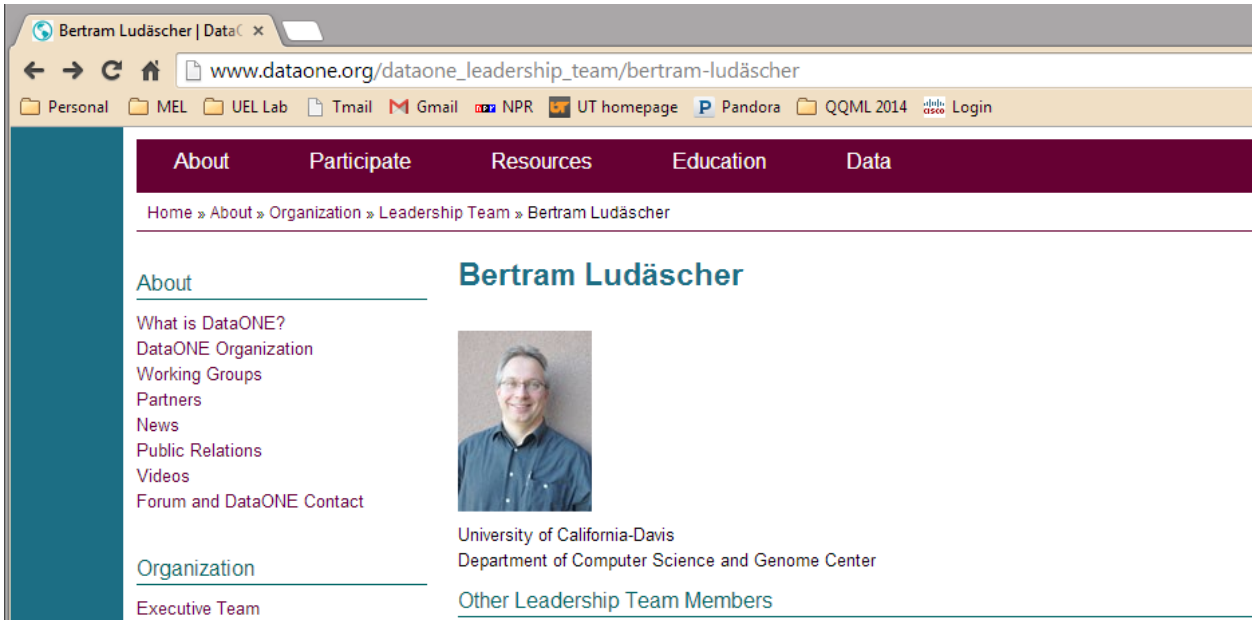
Issue:
Participants were confused by the color of the links and the color of the titles. A shade of purple is used for both the links and the titles, and participants clicked on static titles expecting a hyperlink.

Recommendation:
Use a different color for the titles and the links.



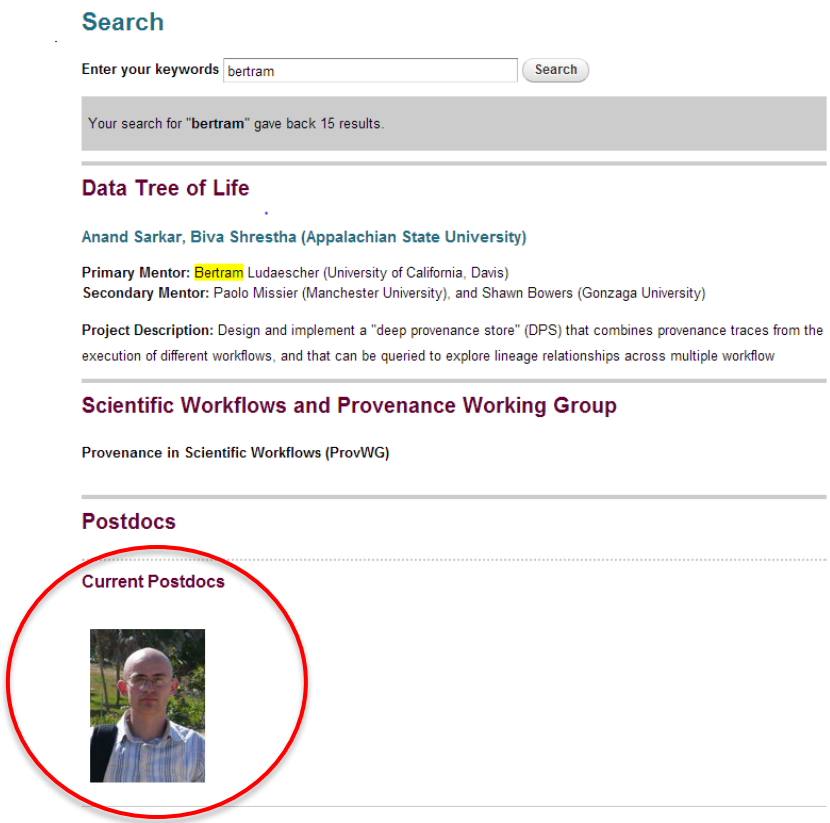
Issue:
DataONE publications are sorted by year, which users found hard to sort through. Participants had to use CTRL F to search for Bertram's publications. There are no other "sort by" options though the down arrow suggests there are more options.

Recommendation:
Provide a way of sorted publications alphabetically by author or other option.



Issue:
Participants expected to find links to Bertram's publications on his webpage, but there are no links to his publications.

Recommendation:
Provide a link to a person's publications from a DataONE member's webpage.



Issue:
When a participant searched the DataONE webpage for Betram a random picture of a man (not Betram) appeared, but there was not identifying information attached to the picture.

Recommendation:
Include identifiers (e.g. name of person) to pictures.